

## SAFETY CARTRIDGE

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

This invention is a Safety Cartridge which permits the firearm owner to quickly use his loaded firearm for self defense or police action but prevents discharge of his loaded firearm by unauthorized persons. The Safety Cartridge is quickly ejected (pistol, rifle, or shotgun) or moved out-of-line (revolver) by the firearm owner before defensive gun use. A criminal or child attempting to fire the gun, however, initiates the Safety Cartridge which jams the gun rendering the gun completely inoperable. Removing the fired Safety Cartridge requires significant time and skill of the gun owner. The Safety Cartridge does not damage the firearm.

#### 2. Description of Related Art

Firearms are used for self defense and police actions to prevent crimes as well as for sport such as hunting and target practice. A responsible hunter or target shooter keeps his firearms unloaded in a locked cabinet with ammunition stored separately in a second locked cabinet. Self defense or police actions, however, requires immediate access which implies a loaded firearm nearby. For example, a loaded pistol on the night stand is 100% useful for self defense and 0% safe. Conversely, the same pistol locked in a cabinet with no ammunition available is 0% useful for self defense but 100% safe. A loaded firearm with a Safety Cartridge in the gun chamber is nearly 100% useful for self defense and nearly 100% safe. The reality is that many firearms for self defense and police action are kept in a loaded and easily available condition. There have been many studies conducted which tend to justify keeping a loaded weapon available.

The Lott - Mustard study based on FBI crime data from 1977-1992 showed that violent crime rate goes down by approximately 25% within 6 years after adoption of Right To Carry Laws (from just under 400 to less than 300 incidents per 100,000 population). Thirty-five (35) states in the US now have Right To Carry Laws (up from only 9 states in 1986). Right To Carry is:

- more cost effective than adding more police or prisons
- presents no risk to law enforcement (law abiding citizens are not the problem)
- benefits women, the aged, the handicapped, as well as able bodied men

A review of "Guns and Self-Defense" by Gary Kleck, PhD, copyright 1997 shows that there are at least 2.55 million incidents of defensive gun use per year in the US (probably much more because adolescents were not counted). Defensive gun uses are 3 to 4 times more common than crimes committed with guns. Defensive gun use significantly lowers victim injury (17% vs. 33%) and property loss (31% vs. 65%). Civilian gun ownership and defensive gun use deters violent crime. Police can only investigate a crime after it has occurred....police can't/don't prevent crime. Only 3% of defensive gun use involves anyone being wounded and most of these wounds (85%) are nonfatal. Most defensive gun use involves just a warning ("I've got a gun.") or firing a warning shot. A majority of gun owners (62%) plan to use their gun for protection as well as for sport and half of these owners keep at least one gun loaded and ready (mainly in the bedroom). Keeping a loaded firearm seems justifiable in America based on the statistic that 83% of Americans will, sometime during their life, be a victim of a violent crime. The mobster Sammy (The Bull) Gravano once called gun control activists "the best friends a crook ever had 'cause guys like me will always get a gun."

The US Constitution Second Amendment and the current position of the United States Justice Department (John Ashcroft under President George W. Bush) gives individuals the right to own a gun and 70% of the States (35 states) have Right To Carry Laws. Most gun owners have a gun for self defense as well as for sport and 31% of all gun owners keep a gun loaded. The Police always keep their guns loaded. Of approximately 600,000 Police Officers in the US, an average of 68 are killed each year and 8 of those (12%) with their own weapon (most taken from holster or squad car). A loaded firearm with a Safety Cartridge in the chamber is very effective for self defense and is nearly 100% safe....the 8 Police Officers killed with their own firearm would probably be alive today if they used the Safety Cartridge in the chamber of their loaded gun. The Safety Cartridge would also prevent gun owners from being wounded or killed with their own weapon.

There are more firearms privately owned today than at any time in US history, and the number continues to rise. Data recently released by the National Center for Health Statistics show there were fewer firearm-related deaths in the US in 1999 than any year since 1971, with drops in each category of death - suicide, murder, and accident. Fatal firearm accidents have steadily declined from over 3100 in 1930 to only 824 in 1999 even though our population more than doubled from 123 million (1930) to almost 273 million (1999). Fatal firearm accidents for children accounted for 88 of the 824 total in 1999....a decrease of 84% since 1975. The significant reductions cited above result from people being more careful due to publicity on the misuse of firearms, better safety training, and better gun design. Introduction of my Safety Cartridge would reduce accidental firearm deaths further ....specially among children who find a loaded gun in their house because pulling the trigger would cause the gun to jam. A gun owner who chooses to use the Safety Cartridge in his loaded weapon must train periodically so he doesn't attempt to defend himself using his weapon with it in the chamber causing his gun to jam. Training should always be done with the gun selected for self defense and include practice on a range.

A patent search was conducted on the Internet using the U. S. Patent and Trademark Office web site, [www.uspto.gov](http://www.uspto.gov). Patents issued between 1790 and 1976 were searched using current US classifications (CCL) for firearm safety and locking mechanisms. Patents issued after 1976 (which accounts for 40% of all patents issued in the US as of mid 2003) were searched using key words and combinations of words existing in the patent text and title. These methods produced nearly 1400 "hits". Some of these "hit" groupings contained the same patent number. References cited in patents similar to my Safety Cartridge were also reviewed. More than 850 patents ended up being looked at in my search. Most were not related to my Safety Cartridge and involved lock boxes, display rack locks, trigger locks, holster locks, firing pin locks, hammer locks, electronic devices activated by magnetic rings, devices requiring gun modifications, etc. The resulting search produced 14 patents dated from 1863 to 2002 as shown on page 1 of this patent. These 14 patents are compared to my Safety Cartridge which is called the "JamIt Safety Cartridge" in **TABLE 1**.

Referring now to **TABLE 1**, the first patent on a safety device occupying the chamber of a gun was issued during the Civil War in 1863 to Bonzano (37,946). It was a chamber plug inserted down the tube of a muzzle loaded cannon to prevent unauthorized loading and firing of the cannon. Comparisons of the 14 patents to my "JamIt" Safety Cartridge can easily be made by examining **TABLE 1**. Many of the devices take too much time to use and thus ineffective in self defense situations (see column 7 of **TABLE 1**). These include Achee et al. (6,408,556), Scott (6,237,272), Samuels (6,041,536), Ross (5,950,344), Briley et al. (5,475,994), Honey et al. (5,171,924), Mikus (5,052,142), Thurber (4,783,924), and Bonzano (37,946) devices. JamIt can be used to provide safety in loaded pistols, revolvers, rifles, and shotguns (see columns 5 and 6 of **TABLE 1**) while most of the other patented devices are generally effective for handguns or a specific handgun (pistol or revolver but not both). Only Scott's (6,237,272), Stuart's (5,394,635 and 5,347,739), and Horton's (5,010,674) safety cartridges have the potential to be used in loaded rifles and shotguns. Scott's device is a simple plug fitted with o-rings and is not effective for revolvers. The purpose of Scott's device is to prevent a customer in a store (where the gun is on display) from inserting a live round of ammunition into a gun, i.e., it is very difficult to remove Scott's plug and therefore not effective for loaded firearms to be used for self defense. Horton's device appears to be limited to revolver use only.

The 7th, 8th and 9th columns of **Table 1** show that JamIt along with Trois et al. (6,418,654), Stuart (5,394,635 & 5,347,739), Horton (5,010,674) and Giles (3,208,176) devices are quick to operate in a self defense situation, jam the gun if an unauthorized person seizes and attempts to fire the gun (pulls trigger) and once the gun is jammed, its difficult to remove the obstruction (barrel tool required). These five safety cartridges basically meet the self defense safety objectives in different ways. The Trois device is rated as only "Fairly Quick" (column 7 of **Table 1**), i.e., the gun owner must pull the device from the barrel and then chamber a live round of ammunition (pistol only, not double action revolver). Also, the Removal after Activation (see column 9 of **Table 1**) is rated "Easy-Perhaps too easy. Child could pull out and fire a revolver." If the Trois device was placed in the wrong gun (say a pistol with a longer barrel), then live ammunition could be chambered and an attempt to fire the pistol would cause the barrel to blow up! Horton's and Giles devices, appear to be limited to revolver use only. Most military and police officers use pistols rather than revolvers. The other two devices, JamIt and Stuart's safety cartridge, use live primers (see column 14 of **Table 1**) to activate the jamming function and can only be used once as shown in column 10. Both JamIt and Stuart's cartridges are activated by firing pin impact (primer initiation) causing the handgun (revolver or pistol) to jam. Both cartridges can be readily and quickly removed or by-passed by the gun owner who is familiar with his weapon and the purpose of the safety cartridges.

There are significant differences between the Stuart safety cartridge and the JamIt safety cartridge. When the primer is initiated by the firing pin, the Stuart projectile which is longer and bigger in diameter than the JamIt slug is arrested by the gun barrel rifling becoming wedged in the barrel while still being held by the special cartridge case. The JamIt slug is connected to a standard cartridge case by an extension spring. The slug is smaller in diameter than the Stuart projectile and moves freely down the barrel after primer initiation. Slug movement is stopped after several inches of travel by the resistant force applied by the extension spring whose elastic limit is exceeded, i.e., the extension spring becomes in effect a compression spring. The resulting cartridge is typically 5 inches long (for a .45 Colt Commander semiautomatic pistol) causing the slug to extend slightly beyond the gun muzzle. For most handguns, the resulting JamIt cartridge slug remains in the barrel near the muzzle end. This depends on the gun caliber and barrel length along with other factors. The fired JamIt cartridge can be removed and the pistol unjammed using a cylindrical rod inserted in the muzzle end of the barrel. This rod can be used to push the slug down the barrel. The cartridge case is then ejected through the pistol breech by pulling on the pistol slide action. Once the cartridge case is free of the chamber, it may be gripped by the pistol owner and the cartridge case, compression spring and slug is pulled out through the breech. The fired Stuart cartridge may be removed and the pistol unjammed by inserting the cylindrical rod down the barrel through the muzzle and pushing very hard to overcome the engraving force on the projectile telescoping the projectile back into the special cartridge case and then ejecting the cartridge assembly through the pistol breech by pulling on the pistol slide action. A similar action on the part of the gun owner is required to unjam a revolver rather than pistol, i.e., the rod is used to push against the JamIt slug (or Stuart projectile) telescoping the slug (projectile) back into the cartridge case until the tip of the slug (projectile) aligns with the forward surface of the cylinder allowing the cylinder chamber containing JamIt (or Stuart safety cartridge) to be moved out of line with the barrel and removed causing the revolver to be unjammed.

In Stuart's most recent patent (5,394,635) for automatic Colt pistols, the long projectile is propelled into and wedged in the barrel by the resultant primer and gun powder gases when initiated by an unauthorized person pulling the trigger. The short cartridge case may be ejected by the unauthorized person by pulling on the slide action leaving the projectile stuck in the barrel. The wedged projectile prevents further live ammunition from being chambered causing the Colt pistol to be jammed. A safety problem could occur if the projectile is propelled too far down the barrel allowing a live round to be chambered and fired with the obstruction (projectile) in the barrel. This can never happen with the JamIt safety cartridge where the slug is firmly connected to the cartridge case with the compression (extension) spring.

The JamIt cartridge is more producible and uses standard rather than special cartridge cases and a much simpler projectile (slug). A simple extension spring anchors the projectile (slug) to the cartridge case using a standard 0.0625 inch spring steel roll pin which is pressed into the side of the cartridge case. The JamIt cartridge is simpler, lower in cost, more reliable and safer than the Stuart safety cartridge. The force relationships for deformation of an extension spring into a compression spring is a much more repeatable event than the force relationships involved in deformation of an oversized projectile in a rifled barrel. Projectile final position in the barrel is dependent on exact projectile diameter, barrel inside diameter and rifling dimensioning, projectile material as well as primer (and gun powder if required) pressure. Early tests on concepts similar to Stuart's projectile design produced significant variability in projectile position in the barrel after primer initiation. Tests on the JamIt extension springs produced very repeatable spring deformation and therefore projectile position within the barrels of various handguns such as the .45 Colt Commander pistol, .45 Colt Gold Cup pistol, 9mm Beretta Mod. 92FS pistol, .357 Smith & Wesson double action revolver, and .357 Ruger Blackhawk single action revolver with long (6") barrel. The gun owner also has the option of installing the o-ring to the slug on the JamIt safety cartridge making it much more difficult to remove after firing it and therefore more safe .... the choice is his!

Some people may prefer to defend themselves in their home with a rifle or shotgun. JamIt can easily be adapted for use with these weapons. A small propellant charge in addition to the primer may be required for the longer extension spring. A longer spring will result in a longer cartridge assembly (maybe 10 to 20 inches long) after JamIt initiation assuring that an unauthorized person can't unjam the longer firearm by removing JamIt. The projectile press fit force may not be sufficient using the Stuart safety cartridge as indicated in footnote (1) in Table 1. The unauthorized person could generate significantly more extraction force in a bolt, lever, or pump action rifle or shotgun than in a pistol slide action. The length of the fired Stuart cartridge is limited to only about 1.5 times the unfired Stuart cartridge by the basic concept design.

In summary, JamIt and Stuart's (5,394,635 and 5,347,739) Safety Cartridges are the only cartridges activated by firing pin impact on a live primer. Primer initiation in the JamIt and Stuart Safety Cartridge cause the firearm to be jammed

rendering it completely inoperable. Both Safety Cartridges can be readily and quickly removed or by-passed (revolver) by the gun owner in a self defense application. There are, however, significant differences between Stuart's device and the JamIt Safety Cartridge; namely:

- JamIt can be used to provide safety to pistols, revolvers, rifles and shotguns.
- JamIt contains an extension spring which is transformed into a very long compression spring when initiated.
- JamIt's slug (projectile) moves freely in the barrel and is not a press fit like the Stuart device.
- The gun owner is given the option of installing an o-ring to the JamIt slug which provides for a press fit of the slug in the barrel making it much more difficult to remove if the JamIt is fired by a child playing with the owners gun, i.e., the o-ring provides more safety and would probably require a gunsmith to remove the fired JamIt Safety Cartridge!
- The fired JamIt cartridge length can be increased from the current 5" to 10", 20", or longer by changing the number of spring coils to assure gun jamming action. The fired length of the Stuart cartridge is limited to about 1.5 times the length of the unfired cartridge.
- No dangerous barrel obstructions are possible with the JamIt Safety Cartridge. An obstruction (projectile) in the barrel is possible with Stuart's device if the projectile is propelled to far.
- The JamIt cartridge is easily identified by the gun owner as a Safety Cartridge with its red anodized aluminum or white plastic (Delrin) slug and bent spring nose, i.e., the JamIt cartridge is "flagged" for identification but the Stuart cartridge is not.
- JamIt uses more low cost standard and common components and is more producible.

**DESCRIPTION OF DRAWINGS AND PREFERRED EMBODIMENTS**

I claim priority of my Provisional Utility Patent on my Safety Cartridge which was submitted to the U. S. Patent and Trademark Office on August 1, 2002 and officially recorded as Application Number 60/400.855, Confirmation No. 9832, and Filing Date 08/05/2002.

A sectioned view of my Safety Cartridge **10** for a 9mm Luger type semi-automatic pistol such as a 9mm Beretta 92FS pistol is illustrated in **FIG. 1**. The Safety Cartridge consists of a standard number 100 small pistol Primer **1**, a standard 9mm Luger brass Cartridge Case **2** which has been cross drilled to accommodate a standard type 420 stainless steel 1/16" x 1/2" tension Pin **3**, a customized extension Spring **4** which has been electroless nickel plated to prevent corrosion, and a Slug **5** (Projectile). The Spring **4** contains a double coil **6** on one end which is soldered or spot welded or silver soldered together for additional strength. The spring **4** double coil **6** may be further strengthened by inserting a steel washer between the double coil followed by dipping the double coil end into a solder bath. The Safety Cartridge **10** is held together by the Spring **4** double coil **6** attached to the Pin **3** and Cartridge Case **1** and Slug **5** with its bent end **8**. The Safety Cartridge **10** is placed in the chamber of a loaded firearm and may be ejected or bypassed by the gun owner if defensive gun use is required. **FIG. 2** and **FIG. 3** show the elongated condition of the Safety Cartridge after initiation and after removal from the gun.

**FIG. 4** is a loaded 9mm pistol **30** comprising a spring loaded hammer **31**, slide **32**, barrel **33**, bore **34**, chamber **35**, frame **36**, trigger **37**, magazine **38** and handle portion **39**. An attempt to fire the pistol **30** by an unauthorized person initiates the Safety Cartridge **10** causing the resulting Primer **1** gases to propel the Slug **5** down the gun barrel **33** several inches until the Slug **5** is arrested by action of the extension Spring **4** which is attached to both the Cartridge Case **2** by means of the Pin **3** and Slug **5** by means of the bent end **8** of the Spring **4**. The Safety Cartridge **10** has now expanded into and occupies the bore **34** of the pistol **30**. Live ammunition **20** contained in the magazine **38** can not be cycled into the gun chamber **35** because the elongated Safety Cartridge **10** occupies the chamber **35** and bore **34** causing the pistol **30** to jam. The gun owner may remove the fired Safety Cartridge **10** by removing the loaded magazine **38**, pulling the Slide **32** rearward and then gripping the Cartridge Case **2** and pulling it out of the breech with the deformed compression Spring **4** and Slug **5** attached.

**FIG. 5** is a sectioned view of my 38 Special Safety Cartridge **10A** for a 38 Special or 357 Magnum revolver. It contains identical components to the 9mm Safety Cartridge shown in **FIG. 1** except for the 38 Special Cartridge Case **2A**. The 38 Special Slug **5** shown in **FIG. 5** has the same dimensions as the 9mm Slug shown in **FIG. 1**.

**FIG. 6** shows a portion of a 357 Magnum or 38 Special revolver **40** comprising a cylinder **41**, chambers **42**, barrel **43**, bore **44**, and frame **45**. An attempt to fire the revolver **40** by an unauthorized person initiates the Safety Cartridge **10A** causing it to expand into the bore **44** jamming the revolver **40** by preventing cylinder **41** rotation so that the live ammunition **20A** cannot be aligned with the barrel **43**. The gun owner may remove the fired Safety Cartridge **10A** from the revolver **40** using the following procedure:

1. Using a wooden pencil, push against the Slug **5** and bent end **8** of the Spring **4** until the Slug **5** enters the Cartridge Case **2A**. This action is facilitated by the chamfer **7** on the rear end of the Slug **5** allowing the Spring **4** loaded Slug **5** to enter the Cartridge Case **2A**.
2. Continue pushing the Slug **5** into the Cartridge Case **2A** until the bent portion of the Spring **8** aligns with the parting surface between the chamber **42** and barrel **43**.
3. At this point, the cylinder **41** which contains several chambers **42** containing the compressed fired Safety Cartridge **10A** and live ammunition **20A** may be moved out-of-line with the barrel **43** and frame **45**.
4. Once the cylinder **41** is out-of-line, the fired Safety Cartridge **10A** may be removed.

**FIG. 7** is a sectioned view of my 45 ACP Safety Cartridge **10B** for semi-automatic pistols such as a Colt 45 ACP Gold Cup, a Colt 45 ACP Lightweight Commander, a 45 ACP AMT Backup, or other 45 ACP pistols and revolvers. It contains identical components to the 9mm Safety Cartridge **10** (**FIG. 1**) except for the number 150 large pistol Primer **1B**, 45 ACP Cartridge Case **2B**, and Slug **5B**.

**FIG. 8** is a sectioned view of my 30-06 Safety Cartridge **10C** for a 30-06 rifle. It contains identical components to the 9mm Safety Cartridge **10** (**FIG. 1**) except for the number 103 rifle Primer **1C**, 30-06 Cartridge Case **2C**, and Slug **5C**.

**FIG. 9** is a sectioned view of my 12 gauge shotgun Safety Cartridge **10D** for a 12 gauge Remington Model 870 pump (or other) shotgun used for hunting, trap shooting, and law enforcement. Since the output of a shotgun Primer **1D** (such as the Federal number 209A primer) is significantly higher than small and large pistol primers and rifle primers, a larger Pin **3D** and Spring **4D** must be used to withstand the higher pressures. Tests showed that a 1/8" diameter (vs. 1/16") Pin **3D** and a Spring **4D** with 34 coils (vs. 20 coils) works okay and results in a fired Safety Cartridge length near 10 inches versus about 5 inches for 9mm, 38/357, and 45 ACP fired Safety Cartridges. The 12 gauge Safety Cartridge **10D** also requires a larger Cartridge Case **2D** and Slug **5D** to fit the larger shotgun.

**FIG. 10** is a sectioned view of my Alternative Preferred Embodiment 38 Special Safety Cartridge. It is similar to **FIG. 5** except it contains an o-ring **12E** on the slug **5** and a standoff tube **11E** between the spring **4** and slug **5**. The standoff tube **11E** was found to be required for the 38 Special Safety Cartridge so that its overall length meets overall length requirements of 1.550" max. specified by gun and ammunition manufacturers. A standoff tube **11E** was not required for my 9mm Luger Safety Cartridge **10** shown in **FIG. 1** or my 45 ACP Safety Cartridge **10B** shown in **FIG. 7**. Use of a standoff tube for the 30-06 Safety Cartridge **10C** shown in **FIG. 9** may be desirable from a producibility / low cost standpoint because its made from low cost plastic tubing and it allows for much shorter slugs [**5C** (**FIG. 8**) and **5D** (**FIG. 9**)].

During Safety Cartridge development, it was decided to machine o-ring grooves in all the slugs for 9mm Luger Safety Cartridges (slug **5** in **FIGS. 1 - 4**), 38 Special / 357 Magnum Safety Cartridges (slug **5** in **FIGS. 5 and 6**), 45 ACP Safety Cartridges (slug **5B** in **FIG. 7**), 30-06 Safety Cartridges (slug **5C** in **FIG. 8**) and 12 gauge shotgun Safety Cartridges (slug **5D** in **FIG. 9**). These Preferred Embodiment Safety Cartridges and Safety Cartridges of other caliber's such as 380 Auto, 40 S& W, 10mm Auto, 44 Remington Magnum, etc. would all be equipped with slugs containing an o-ring groove. O-rings would be provided in the Preferred Embodiment Safety Cartridge packaging with instructions giving the gun owner the option of installing the o-ring to his Safety Cartridge. The instructions would state:

"If you elect to install the o-ring to the slug of your Safety Cartridge, the fired Safety Cartridge would be much more difficult to remove from your gun and may even require the services of a gunsmith. Using the o-ring improves safety further. It would be nearly impossible for a child or other unauthorized person who has not read the instructions to remove the fired JamIt Safety Cartridge equipped with the o-ring. The o-ring causes the slug to be stuck in the barrel. Considerable force (up to 100 pounds and more depending on lubrication, interference and rubber hardness) must be applied to the slug to move it out of the barrel."

The JamIt Safety Cartridge is packaged with the o-ring separated from the cartridge. If the gun owner decides he wants the increased safety of an o-ring equipped Safety Cartridge, he would then choose to install the o-ring himself. He would have only himself to blame if he is forced to employ a gunsmith to clear the fired JamIt Safety Cartridge from his jammed firearm. If he decides against employing the o-ring, it would be much easier to clear the fired JamIt Safety Cartridge from his weapon but less safe. It is very probable that in either case, clearing the weapon of a fired JamIt cartridge will never need to be done .... the need arises only if some unauthorized person tries to fire his gun. One JamIt cartridge should last the gun owner a lifetime since its very unlikely it would ever be used. It should also be emphasized that a fired JamIt Safety Cartridge does not damage the firearm in any way.

In summary, Safety Cartridges are presented for 9mm, 38 Special, 357 Magnum, and 45 ACP semi-automatic pistols and revolvers and bolt action, lever action, pump, or semi-automatic 30-06 rifles and 12 gauge shotguns. Safety Cartridges for other popular caliber firearms can easily be developed and produced. Most of the Safety Cartridge parts are low cost standard (Pin and Primer), modified standard (standard Cartridge Case with cross-drilled holes), or common (same Spring used in Safety Cartridges for all pistols, revolvers, and rifles) parts. The Spring had to be lengthened (34 vs. 20 coils) for the shotgun Safety Cartridge because of the increased Primer gas output. The Slugs were made from red anodized aluminum or white lightweight plastic (Delrin) so the gun owner could visually identify the Safety Cartridge from live ammunition. The bent Spring end on the Slug nose also helps identify or flag the Safety Cartridge from live ammunition. Extensive testing on lightweight Slugs (vs. heavy brass Slugs) showed that fired Safety Cartridge elongation is doubled to about 5 inches in pistol and revolver applications assuring a jammed and safe firearm. Longer fired Safety Cartridge elongation (7 to 10 inches) was observed for rifles and shotguns due to longer cartridge length and a longer Spring for shotguns.

**TABLE 1 - How JamIt Safety Cartridge Differs from other Inventions Identified in the Patent Search**

1	2	3	4	5	6	7	8	9	10	11	12	13	14
<u>Patent No.</u>	<u>Description</u>	<u>Date Issued</u>	<u>Inventor(s)</u>	<u>Loaded</u>	<u>Loaded</u>	<u>Owner use</u>	<u>Unauthorized</u>	<u>Removal after</u>	<u>Use after</u>	<u>Press</u>			
	<u>Safety cartridge (jamit)</u>	<u>2003?</u>	<u>Aske</u>	<u>Pistol &amp; Revolver</u>	<u>Rifle &amp; Shotgun</u>	<u>Self Defense</u>	<u>use of gun</u>	<u>Activation</u>	<u>Activation?</u>	<u>Flag?</u>	<u>Slug?</u>	<u>Spring?</u>	<u>Priming?</u>
				<u>Both</u>	<u>Both</u>	<u>Quick-Eject cart. (pistol) or rotate cylinder (revolver)</u>	<u>Pulling trigger jams gun</u>	<u>Difficult-Barrel tool required + Eject cart. Owner can make it more difficult (safe) by adding o-ring to the Slug. Easy-Perhaps too easy. Child could pull out and fire a revolver. Difficult-Barrel Tool required + Must eject Breech Member</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Extension becoming compression</u>	<u>Yes</u>
6,418,654	Handgun safety device	7/2002	Trois & Crawford	Both	No	Fairly Quick-Must pull device from barrel and chamber live round	Chamber and barrel plugged-can't be fired	Easy-Perhaps too easy. Child could pull out and fire a revolver. Difficult-Barrel Tool required + Must eject Breech Member	Reusable	Yes	No	Optional	No
6,408,556	Breech block firearm safety device	6/2002	Achce & Zaharek	Both	No	Slow-Barrel Tool required to remove	Chamber plugged-can't be fired	Difficult-Barrel Tool required + Eject cart. Difficult-Barrel tool required + Eject cart.	Reusable	No	No	No	No
6,237,272	Breech block safety	5/2001	Scott	Pistol only	Slow	Slow-Barrel tool required to remove	Chamber plugged-can't be fired	Difficult-Barrel tool required + Eject cart.	Reusable	No	Yes	No	No
6,041,536	Security lock for revolver	3/2000	Samuels	Revolver only	No	Slow-Barrel tool required to remove	Chamber plugged-can't be fired	Difficult-Barrel tool required + Eject cart.	Reusable	No	No	No	No
5,950,344	Quick-release gun lock	9/1999	Ross	Pistol only	Slow	Slow-Barrel tool required + Eject	Chamber plugged-can't be fired	Difficult-Barrel tool required + Eject cart. Difficult-Barrel tool must be removed + Eject cart.	Reusable	No	Yes	No	No
5,475,994	High security gun lock	12/1995	Briley, Croft, & Schneek	Both	No	Slow-Barrel tool must be removed + Eject	Chamber plugged-can't be fired	Difficult-Barrel tool required + Eject cart.	Reusable	Yes	No	No	No
5,394,635	Safety cartridge	3/1995	Stuart	Both	? (1)	Quick-Eject cart. (pistol) or rotate cylinder (revolver)	Pulling trigger jams gun	Difficult-Barrel tool required + Eject cart.	No	No	Yes	No	Yes
5,347,739	Safety cartridge	9/1994	Stuart	Both	? (1)	Quick-Eject cart. (pistol) or rotate cylinder (revolver)	Pulling trigger jams gun	Difficult-Barrel tool required + Eject cart.	No	No	Yes	No	Yes
5,171,924	Flagged firearm lock	12/1992	Honey, Osborne, & Ruston	Better for revolvers	No	Slow-Barrel tool required	Chamber plugged-can't be fired	Difficult-Barrel tool required	Reusable	Yes	No	No	No
5,052,142	Safety lock for revolvers	10/1991	Mikus	Revolver only	No	Slow-Barrel tool required	Revolver cylinder locked-can't be fired	Difficult-Barrel tool required + Eject cart.	Reusable	No	No	Compression	No
5,010,674	Spring actuated safety cartridge	4/1991	Horton	Better for Revolver	? (2)	Quick-Eject cart. (pistol) or rotate cylinder (revolver)	Pulling trigger jams gun	Difficult-Barrel tool required + Eject cart.	Reusable	No	No	Ribbon like Compression	No
4,783,924	Handgun safety device	11/1988	Thurber	Both	No	Slow-40 pound force + Remove cart.	Chamber & barrel plugged-can't be fired	Difficult-Remove lock and chamber plug	Reusable	Yes	No	No	No
3,208,176	Safety device for revolvers	9/1965	Giles	Better for revolvers	No	Quick-Rotate cylinder (revolver)	Pulling trigger jams revolver	Difficult-Barrel tool required + Eject cart.	Reusable	No	No	Compression	No
37,946	Implement for disabling ordnance	3/1863	Bonzano	No-For muzzle loaded cannon		Not applicable	Chamber plugged-load thru muzzle	Difficult-Barrel tool required	Reusable	No	No	No	No

Section: Drawings

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(1) Projectile (slug) press fit force may not be sufficient to prevent user from loading new round of live ammunition.  
(2) Unwound spring may be of insufficient length to prevent user from cycling in new round of live ammunition.